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came over here alone. The place where he first settled was Durham, whence he removed to Halifax. Here he remained for several years as organist and teacher of music, at the same time devoting his leisure hours to the study of languages. A variety of apocryphal stories are told of this part of his career, some of which are certainly incorrect.

It was not till about the year 1766, when he was organist to the Octagon Chapel at Bath, that Herschel began to direct his attention to that noble science which he afterwards cultivated with so much success. His knowledge of mathematics was very considerable, and his skill in applying it sufficed to demonstrate that he might have won the highest distinction in that department of science, if he had confined himself to it. With this preliminary advantage he commenced the study of astronomy under very favourable circumstances. Before long he began to feel the want of a better telescope than he possessed or could purchase. Here was a difficulty which, to an ordinary mind, would have appeared insuperable. It is at such turning-points as these that the true character of a man appears. The commonplace person, who lives only according to a prescribed routine, and has no resources within himself for trying emergencies, no sooner encounters an obstacle than his heart fails him, and he foregoes the object of his pursuit almost without a struggle. Not so the man of genius. To him difficulties are but incentives to pleasurable exertion. It matters not how unexpected or how unprecedented to him they may be, he is never at a loss for some means of overcoming them. Such was the case with Herschel at this juncture. Not being able to purchase, or in any other way procure, a telescope of the size and power he wanted, he determined to make one. As may be supposed, his first attempts were not successful; but, nevertheless, he still persisted in them, undaunted by repeated failures, till at length he succeeded in constructing a Newtonian reflecting telescope of five feet focal length.

Nor was Herschel long in turning to account the resources which he had acquired by his constructive skill and industry. He applied himself diligently to a careful observation of the heavenly bodies, and the study of all the phenomena which throw light upon their constitution, movements, and laws. The results of his observations were communicated in his papers of "Philosophical Transactions," one of the earliest of which contained an announcement of his having discovered what was then supposed to be a comet, but was soon ascertained to be a new planet. The discovery took place between ten and eleven o'clock on the evening of March 13, 1781. While observing some stars in the constellation Gemini, Herschel noticed one that appeared larger than the rest, and, on examining it with greater magnifying power, he soon found its position with relation to the other stars was changed, which proved that it was in motion. It is remarkable that the planet had been repeatedly observed, and its position recorded as a fixed star by various astronomers, one of whom, Lemonnier, could not have failed to discover that it was a planet, if he had but brought into one view all his observations of the same object. In a spirit of misguided loyalty—or, as many would say, unworthy flattery—Herschel proposed to call the planet Georgium Sidus, or the Georgian Star, in honour of George the Third, who was then king. But astronomers, who have other objects in view than the gratification of royal vanity, could hardly be expected to accede to such a title; still less could foreigners consent to pay such homage to a sovereign who had no claim upon their allegiance. Laplace, the celebrated French astronomer, with a praiseworthy desire to honour the discoverer, proposed that the planet should bear his name; and many acted upon his suggestion. But even this did not meet with general acceptance; and after some discussion, the name of Uranus, by which the planet is now known, was proposed by Bode and fixed upon as most appropriate.

The next discovery of Herschel took place in the early part of the year 1787, when he established the existence of two satellites of Uranus, and made an approximation to the time of their revolution. Ten years later he discovered the four other satellites of this planet. He had great difficulty in discerning them, and they have scarcely ever been seen since, whence some have been inclined to question their existence; but there appears to be no sufficient ground for doubt on the subject.

The effect of Herschel's discovery of Uranus, was to bring him at

once into public notice. His fame spread all over the continent, and he was appointed private astronomer to George III., with a salary of £400 a-year. He now removed first to Datchet, and afterwards to Slough, where he pursued his researches with unremitting ardour and great success. He married a widow named Mrs. Pitt, who was the mother of Sir John Herschel, the present worthy inheritor of the illustrious name. Of his private life after this time little can be said, because little is known on good authority. So scanty is the information respecting it, that even the dates of his knighthood, and receiving the degree of Doctor of Laws at Oxford, cannot be ascertained. But what we do know is, that for a long series of years, from 1780 to 1821, he communicated to the Philosophical Society a great number of papers upon the subject of his astronomical studies, thus showing that to the very last he retained his ardour in the pursuit of truth; for on the 23rd of August, 1822, death brought his labours to a close, when he had nearly completed his eighty-fourth year.

It is beyond our province to give any detailed account of the discoveries of this great astronomer; but the bare fact that his various contributions to our knowledge of the solar system increased the number of heavenly bodies in it by one-half, shows how well-founded is his claim to universal admiration. Besides Uranus with its six satellites, and the two satellites of Saturn, he discovered the rotation of Saturn's ring, measured the rotation of Saturn and Venus, and by many observations and well-founded reasonings contributed largely to the advance of modern astronomy. Indeed it may safely be asserted, that to no one are we so deeply indebted for what we know of the solar system. But his discoveries were not confined to the solar system. It was he who first opened our eyes to the infinite vastness of the universe, by showing that our system is only one of a countless number of others, which extend throughout the boundless regions of space, not only far beyond mortal ken, but even beyond the most daring flights of human imagination. His discovery, in 1803, that many objects which looked like single stars, and had hitherto been taken to be such even by astronomers, were, in fact, pairs of stars revolving round each other, was the first step to more just conceptions than had previously prevailed upon this subject; and his grand speculations upon the milky way, nebulae, etc., contributed still further to this desirable result. Imperfect as is this sketch of what Sir William Herschel accomplished, it may be sufficient to show that he made many valuable additions to our astronomical knowledge; and when we reflect how important a bearing this knowledge has upon various practical arts—especially that of navigation and all that depends upon it—we see how great a benefactor he was to mankind, and how worthy he is to occupy an honourable place in the grateful recollections of posterity.

#### AMBOYNA, OR THE ISLAND OF DEW.

THE ISLE OF DEW, as the Dutch call the chief of the Moluccas, is little known to the world. Though only occupying a space of thirteen geographical miles, it has 30,000 inhabitants. It presents a very varied aspect. It rises from the sea towards a centre, with a gradual but broken slope dipping into valleys, casting up clusters of hills, or expanding into little table-lands. Some of the hills present a very pleasing appearance, green and verdant to the summit, while some have only woods at the base. English and Dutch travellers vie with each other in their descriptions of this capital of the Spice Islands. Temminck talks of an atmosphere laden with the soft odour of aromatic plants and flowers, and of rich plains shaded by sago and cocoa-palms. The prospect he declares to be enchanting in its beauty. Ver Huell is more enthusiastic than his comrade in description. The flowers of the island fill the air with fragrance. According to him, it is a perfect Eden, where a Sybarite might dwell in ease and luxury and voluptuousness all the days of his life. Some parts, however, are barren, but others are luxuriantly fertile. Here the nutmeg and the clove grow in rich perfection, and bring riches to the Dutch of more sure return than silver and gold-mines.

In addition to the spices, the island produces woods affording fragrant essences and oils with medicinal virtues, exquisite woods

for cabinet-work, from which slabs for tables five or six feet in diameter are cut, one of which, of rare beauty, we have ourselves seen. Coffee, indigo, cotton, and pepper grow, but are neglected, as is cinnamon. But the island is almost wholly destitute of the necessaries of life. The Dutch have always kept down ordinary agriculture, and forced the people to depend on their commerce for support. Rice is a great article of food, and this is supplied by Java, Celebes, and Bengal. Yams grow in great abundance, and are an extensively-used article of food. But the best resource of the islanders is the sago, or Papua bread. This is the pith of a palm, the humblest, the nipa excepted, of its tribe. It furnishes the principal food of the people, its delicate flour being baked into cakes. This is its native country—that is, in the region between Borneo on the one side, and New Guinea on the other. The quantity of pith from a single tree is immense, often as much as 600 pounds. The refuse left in heaps produces excellent mushrooms. The epicures of Molucca even eat certain white worms generated in the same refuse.

One palm-tree on this island produces a poison, used to poison water, in the early days of the Dutch, by the natives. They now make an intoxicating drink from it. The betel nut, tobacco, and the wild banana, are also found. It is singular that all these

things are consumed on the spot, while the spices are utterly neglected. They send all away, without ever using them at all themselves. Teak is a tree much used, as also ginger.

Deer and hogs are the chief animals, the island being poor in quadrupeds. But birds swarm in the forests, in every variety of plumage—purple, bright blue, gold, green, and gaudy crimson. The edible birds' nests are found here and exported to China with tressang, sharks' fins, and small parcels of gold. To the same country they also send birds of Paradise (variously called Birds of God, Birds of the Sun, and King Birds). There is also a trade in feathers.

The people are of middle size, military in their character, very impetuous, but easily appeased. They were represented by the Dutch, who behaved to them with savage cruelty, as a ferocious race without any merciful ideas. They are now, however, a quiet race. They must have been a simple people when discovered, as they boiled their food in a hollow bamboo. They now use iron pans from China.

The island is celebrated in the history of Indian colonisation as the scene of a fearful execution by the Dutch of Captain Towerson and nine other Englishmen, nine Japanese and one Portuguese, known as the Massacre of Amboyna.

## RELIGION AND ARTS OF THE ASSYRIANS.

It has been remarked in a former article on Nineveh,\* that the character of the Assyrians was eminently religious, though their veneration was falsely directed, and took a superstitious and debasing form. There are some lofty conceptions, however, in their sculptured embodiments of the power and majesty of God; and something of the religious philosophy of the Chaldeans and Egyptians must have been known to their priests. But in speaking of them as a people, it is their public worship and the popular creed that we must notice, rather than the abstractions which the priesthood conserved for their own order. In all countries, the sun appears to have been the earliest object of religious adoration; but, except among the Persians, popular ignorance and superstition personified this glorious symbol of divine power and beneficence, and hence Baal, or Belus, Crishna, Osiris, Apollo, etc. Baal was the supreme divinity of the Assyrians and Babylonians, and probably of the Phoenicians also, and as such is represented on a cylinder of green feldspar found by Mr. Layard at Kouyunjik, and supposed by him to have been the signet or amulet of Sennacherib.

On many of the Assyrian bas-reliefs, and other antique remains of the same country and period, an object is represented called a sacred tree, one of the forms of which is represented in the annexed engraving (p. 284). On the cylinder in question, the flowers or fruit of the tree are in the form of an acorn, and the king stands on one side, and a figure, described as a eunuch, on the other. The king holds up his right hand in an attitude of adoration, and in his left is the sacrificial mace. Above the sacred tree is the figure of Baal, the body of the god in a circle, the symbol of eternity, above which are the three heads of Baal (an unusual mode of representing that deity), while from the sides spread the wings, and from below the tail and legs of a dove, typical of Mylitta, the Assyrian Venus. Among the sculptures excavated at Nimroud were several figures of Dagon, the fish-god of the Phoenicians, from which we learn that, in accordance with that intercommunity of worship which prevailed universally among the polytheistic nations of antiquity, the Assyrians imported into their pantheon some of the gods of the neighbouring nations. Among the twelve gods of the Assyrians, enumerated in a long inscription at the same place, are Asshur, probably a deified hero, and Ishtar, who is, not without probability, supposed to be the personification of the moon.

The predominant religious element, in the character of the Assyrians, is seen in the designs traced upon their domestic utensils, engraved upon their seals and amulets, and sculptured on

the walls of the palaces of their kings. Of the eleven devices of the impressions of seals found at Kouyunjik, seven appear to be connected with the mythology and religious worship of the country. Several of the bronze plates and dishes discovered at Nimroud are of similar character, and on some of them are represented deities of Egyptian origin, though evidently designed and executed by Assyrian artists. These remains of the mechanical ingenuity and artistic powers of the Assyrians, while they evince the extent to which the feeling of religion, mingled with the every-day concerns of life among them, are also valuable for the glimpses they afford us of their domestic economy. They were dug out of a chamber of the north-west palace at Nimroud, which Mr. Layard conjectures has been the repository of the royal arms and sacrificial vessels; but which Colonel Rawlinson (who discovered, in an adjoining chamber, an alabaster vase, which appeared to have contained preserved fruit) is of opinion was the royal kitchen. The walls were of common sun-dried bricks, such as are used throughout Asiatic Turkey and Persia for ordinary purposes at the present day, except about three feet from the floor, where large burnt bricks had been used. In one corner was a well, with a raised mouth of brickwork three feet high; it was filled up with rubbish, but on being emptied to the depth of sixty feet, brackish water was found. In clearing out the rubbish which filled up the chamber, two copper caldrons were found, about three feet deep, and two feet and a half in diameter; these were filled with a number of small bronze bells, several bronze plates, dishes, and cups, hundreds of ivory and mother-of-pearl buttons and studs, and various small articles in bronze and copper, the use of which is not very clear. The studs and buttons and some metal rosettes appear to have been used in the trappings of the Assyrian cavalry horses, and also or those attached to chariots.

Beneath the caldrons a number of bronze feet of lions and bulls were found, which probably had been the feet of tripods for supporting vases and bowls. Two other caldrons contained several plates and dishes, a wine-strainer of elegant form, and the handle of a vase, all of bronze. Of eight other caldrons and jars, some of which had been crushed flat by the falling in of the upper part of the building, one contained bones and ashes; the rest were empty. Behind the caldrons was a heap of bronze cups, bowls, and dishes, of various shapes and sizes, lying one above another, without order.

Some of the bronze vessels thus discovered are plain, but many are elaborately ornamented with figures of animals, etc., either embossed or engraved. About 150 of them are now in the British Museum. The metal of which they are composed has been found to contain one part of tin to ten of copper, which are the relative